The Virtual and the Virtuous

The Virtual and the Virtuous :*Integrating Digital Design into a Craft Curriculum*

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Q. How are digital methodologies being introduced to traditional studio based craft programs by leading subject practitioners and applied by their new emerging makers?

This paper explores the current craft practices and ethos of academic craft makers within the Design school at Edinburgh College of Art / The University of Edinburgh.

1. Introduction

Edinburgh College of Art (eca) has had a strong virtuous tradition of studio-based practice dating back to the 18th Century, eca merged with the University of Edinburgh (est. 1583) in 2011 and subsequently with a larger community of digitally versed makers across design, fine art, music and architecture practices go beneath a material surface to investigate shared themes of production, narrative, and memory.

The Jewellery and Silversmithing department at Edinburgh College of Art runs a four-year under-graduate BA course with an international reputation as one of the UK most highly regarded courses to study this craft based subject.

This paper explores how digital design has been introduced to a craft curriculum and asks:

- How are digital methodologies being introduced to traditional studio based craft programs like Jewellery and Silversmithing and applied by their new emerging makers?
- Have values of craftsmanship altered when operating in the territory between craft culture and digital making?

(Fig1, 2, 3)

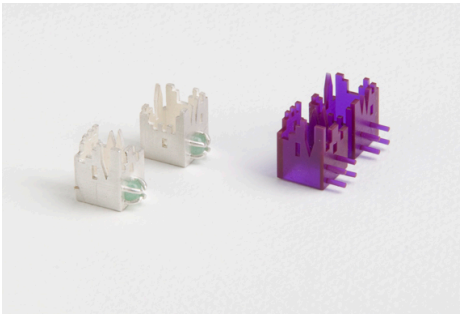
Limited Edition is a third year live project introduced in 2009 by Stephen Bottomley with the objective to introduce students to making with computer aided design manufacture. This paper charts five years 2009- 2014 a period when student's have become increasingly digitally literate

and more open to the idea that digital design and manufacture can enhance studio hand making without threatening to replace it. For LTD Ed project brief students are asked to create a Limited Edition Batch production run of at least ten pieces utilising computer aided design and manufacture and working with Weston Beamor, one of Europe's leading casting and RP jewellery specialists.

(Fig 4,5)

Students on this course over the first semester in year 3 are exposed to a complete design cycle, from research and design development of prototypes to final masters and realised pieces. The design development is achieved through a combination of hand drawing and 3D modelling run in parallel with small refresher master classes in Computer Aided Design taught by Kathryn Hinton to compliment the classes first introduced to them in 1st and 2nd year by Douglas Bryden.

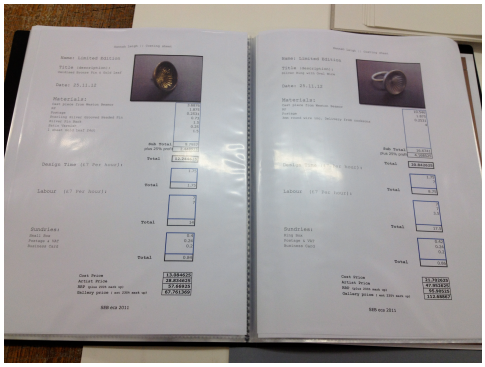
A study visit to the factory is important both to meet the manufacturers and understand the process from an industrial and commercial perspective and to underlie the LIVE nature of the project. It is written into the agreement with the prototyping bureau at Weston Beamor that the students will receive two Rapid prototyped CAD models back for evaluation.

(Fig 6 ,7)

A digital drawing or model is typically sent to a bureau or rapid prototyping unit to be printed in wax or plastic. These models can then be direct cast or a silicon mould can be made from them for multiples to be produced. It is an important part of this project that the students have the chance to review models twice to make sure they are suitable for purpose before moulding the pieces for reproduction and final casting in metal. Only a short limited but focussed period of bench work is available at the end of the semester before the work is due for exhibition and for

sale. This puts pressure on the students to think cleverly about their design and ensure post-production and finishing is kept to a reasonable level and is not too arduous.

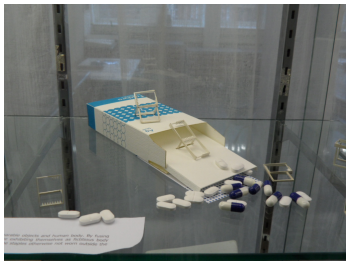



(Fig 8, 9)

Importantly the digital design drawings are often drawn working from analogue hand made models in wood, plastic or metal. This is a low tech / high tech approach to integrating digital skills with the traditional studio based craft skills taught on the Jewellery and Silversmithing program. In this way it lays equal importance on both processes feeding the other and supports the existence of a 'close relationship between digital work and craft practice' (McCullough).

Students importantly learn to cost and value their time while working to tight deadlines, learning how they can collaborate as a designer with industry to achieve commercial work with a broader market place than one-off bespoke or gallery jewellery.

School wide interdisciplinary collaborations have developed exciting partnerships between Product Design students, who formed teams to develop design concepts -and more recently Graphic Design students who ran a parallel Packaging project with the jewellery students as their clients.

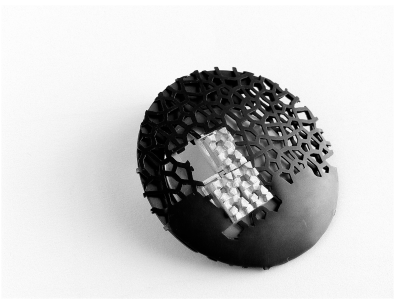


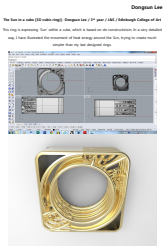

(Fig 10,11,12)

Reflecting on the work of the past five years and sixty or so students who have been through this project and questioning if the values of craftsmanship have altered through operating in the territory between craft culture and digital making, it is clear that the digital technologies have added a great deal to the existing toolkit[i] of skills a designer/maker has available. The values of making objects well and achieving high standards of design and making are still as important today as in the past. Work like the jewellery of MA graduate Alice Bo-Wen Chang reflects her previous training as an architect and confidence with the computer software she used then to

design windows and cladding for skyscrapers. The scale has changes and in this piece of 2011 Chang cleverly used the small prototyped and silver castings as kinetic puzzles pieces that can slide around on the larger hand cut frame they occupy.

Recent developments now see students literally 'breaking the mould' of the casting size limitations imposed by Weston Beamor for their castings and now exploring sintering technologies with companies like 'Shapeways' and 'Cookson' who have installed three Gold bureau sintering machines at their Birmingham factory in 2013. The future is bright for LTD Edition.





(Fig 13,14,15)

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i Shillito, Ann Marie, 2013 'Digital Crafts', London, Bloomsbury
Shillito presents Digital technologies as tools to be mastered, the same as any other tool in a makers 'toolkit' but qualifies this by saying "*However, as being 'digital' means the processing part is 'hidden', making understanding and controlling the process from concept to end product seem more complicated, unfamiliar… and definitely not craft."* p.9

Images

Fig 1 LTD Ed exhibition set-up at Inspace gallery, Edinburgh, 2013

Fig 2 LTD Ed exhibition set-up at Inspace gallery, Edinburgh, 2013

Fig 3 LTD Ed Poster 2010

Fig 4 ECA *Class at Weston Beamor Ltd*

Fig 5 The vacuum casting room with Managing Director Andrew Morton and eca class

Fig 6 Rapid prototyped stereo lithography model and silver work Linda Johnston 2010

Fig 7 Rapid prototyped stereo lithography model and silver work Mariko Sumioka 2010

Fig 8 Hannah Leigh, Design drawings and completed work 201

Fig 9 Hannah Leigh, Costing Sheets 2013

Fig 10 Erin Quinn jewellery and packaging 2013

Fig 11 Eva Melinka jewellery and packaging 2013

Fig 12 Minjung Cho jewellery and packaging 2013

Fig 13 Alice Bo-Wen MA Chang eca, Hand held object 2011

Fig 14 Dongsun Lee Sintered steel jewellery 2013

Fig 15 Dongsun Lee Sintered steel jewellery design for Cookson Gold 2013

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